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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/690,835 | 10/21/2003 | Subbareddy Kanagasabapathy | 52069 | 5411 |
| 21874 | 7590 | 08/02/2006 | EXAMINER | |
| EDWARDS & ANGELL, LLP | | | LEE, SIN J | |
| P.O. BOX 55874 | | | ART UNIT | |
| BOSTON, MA 02205 | | | PAPER NUMBER | |

1752

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/690,835

Applicant(s)

KANAGASABAPATHY ET AL.

Examiner

Sin J. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-24, 32-34, 36-38 and 40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32, 34, 36, 37 and 40 is/are allowed.
- 6) ☐ Claim(s) 21-24 and 38 is/are rejected.
- 7) ☒ Claim(s) 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. As explained in the Interview Summary mailed on July 12, 2006, this Office action is being sent out as a correct response to applicant's amendment of April 14, 2006.
2. In view of applicants' amendment of April 14, 2006, previous 102(b) rejection on claims 25-28, 30 and 39 over Aoso et al (JP'458), previous 102(b) rejection on claims 32-36 and 40 over Kawamura et al (EP'381), previous 102(e) rejection on claims 25-29, 31, 32, 34-37, 39 and 40 over Barclay et al'785 and previous 103(a) rejection on claims 21-24, 32-35, 37, 38 and 40 over Kawamura et al (EP'381), previous 103(a) rejection on claims 21, 22, 24 and 38 over Mizutani (JP'855) and previous double patenting rejection on claims 25-27, 29, 31 and 39 over App.No. 10/382,090 are hereby withdrawn.
3. Applicant's amendment (of April 14, 2006 in which applicants added the limitation "silsesquioxane") necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Claim Objections

4. Claim 33 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In claim 33, applicants recite that the one or more of the polymer repeat units comprise one or more photoacid labile groups. Since this limitation is already included in claim 32, claim 33 fails to further limit the subject matter of claim 32.

5. ***It is to be noted that present limitation "the polymer or one or more other components comprises one or more Si atoms and one or more sulfonamide groups" is being interpreted by the Examiner to mean that the polymer or the one or more other components comprises one or more Si atoms and one or more sulfonamide groups within a molecule.***

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 21-24 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin et al (US 6,210,856 B1).

Lin teaches (see claims 1 and 2) a radiation-sensitive resist composition containing a poly(hydroxyphenyl alkyl)silsesquioxane and a non-silicon-containing base polymer, a photoacid generator and a solvent. In claim 3, Lin teaches that the hydroxyphenyl group is protected with an acid sensitive protecting group. In claims 10 and 11, as one of a few examples for the non-silicon-containing base polymer, Lin teaches a sulfonamide group type polymer. Since there are only several examples disclosed, one skilled in the art would immediately envisage a sulfonamide group type polymer as his non-silicon-containing base polymer. Also, in claims 23 and 26, Lin teaches a process of forming a patterned resist film on a substrate. Therefore, Lin teaches present inventions of claims 21-23 and 38.

With respect to present claim 24, Lin also teaches (see claims 4 and 5) that the silicon-containing polymeric additive can be a homopolymer of a silicon-containing monomer, which comprises a silicon-containing substituent (such as cubic silsesquioxane) on a moiety selected from the group consisting of styrene, hydroxystyrene, an acrylate, a methacrylate, an acrylamide, a methacrylamide, itaconate, an itaconic half ester and a cycloolefin. Since there are only several examples disclosed, one skilled in the art would immediately envisage a homopolymer of a silicon-containing monomer, which comprises a cubic silsesquioxane on a (meth)acrylate moiety, as his silicon-containing polymeric additive (and the sulfonamide group type polymer as his non-silicon-containing base polymer as discussed above). Therefore, Lin teaches present invention of claim 24.

Allowable Subject Matter

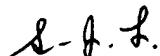
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8. Claims 32, 34, 36, 37 and 40 are allowed. In Lin, the sulfonamide group can only be included in his non-silicon-containing base polymer. Therefore, Lin does not teach or suggest present polymer or one or more other components comprising one or more Si atoms and one or more sulfonamide groups.

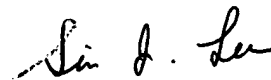
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee
July 28, 2006



SIN LEE
PRIMARY EXAMINER